

On the whole, it appears, I think, that my original view is correct ; that it is for the most part *morbid excitation—irritation* as opposed to *stimulation*—which produces reflex or inhibitory paralysis in any part. Some few instances there are of physiological inhibition, but these seem only to render it more probable that a similar effect can be produced pathologically. Loven's experiment, on which much stress is laid, seems to me rather an instance of pathological than of physiological inhibition. If we think what a difference there must be between our rude experimental excitation of a nerve and the normal, we must admit that the conclusion arrived at by Mr. Lister, respecting the different effects of gentle and strong stimulation, is highly rational and probable.

ART. V.—NOTES OF SOME RECENT CASES OF DEAFNESS, FOLLOWING CEREBRO-SPINAL MEN- INGITIS.

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THAT many cases of deafness, following cerebro-spinal meningitis, give evidence that the lesion is in the perceptive apparatus of the ear, instead of in the conducting, is well known. It is, however, often difficult to ascertain, in these cases, the extent of the lesion and its exact location ; to determine if it be in the brain, at the origin of the auditory nerve, in the length of the nerve, or in its termination.

The ordinary tuning-fork of musicians will generally afford a means of deciding whether the conducting or perceptive apparatus alone be affected ; but where both are involved, diagnosis is more difficult. Since nervous deafness is a far more serious calamity than impaired hearing, dependent upon some

defect of the conducting apparatus, it is important to distinguish between the two cases, as prognosis and treatment will be materially influenced thereby.

Notwithstanding the recognized frequency with which cerebro-spinal meningitis is followed by deafness, the literature of otology shows how little the pathology of these cases is understood. If physicians would but note and report the manifestations of ear trouble in the progress of cases of this disease, and examine the labyrinth in fatal cases of it, much valuable information would doubtless be obtained. The aural surgeon frequently sees the cases only after all the change has occurred, and he is consulted only when hearing is lost and an effort is being made for its recovery.

With a desire to contribute some facts regarding a few of these peculiar cases, the following notes are given:

CASE I.—Miss S., age seventeen, at present in good general health, suffered several months since from cerebro-spinal meningitis, which has left her deaf. Her friends report that she does, at times, hear certain particular sounds, but does not hear conversation.

In examination, the tuning-fork was either heard, or the vibrations were felt, but it was difficult to decide which was the result. No marked evidence of hearing was manifested. Subsequently, whilst I was engaged in conversation with her friends, and she was looking at pictures on the walls, I struck the table in my consulting room very lightly, when there was no chance that she saw me do so, nor could she possibly have felt any vibration from so slight a movement, and yet she turned immediately and smilingly intimated that she heard the sound made.

No further attention was given it; and as the conversation progressed her attention was again attracted by something. The knock on the table was repeated, when she turned again and in a similar manner indicated that she heard the sound. Her friends stated that, under some similar circumstances only, she gave evidence of hearing an occasional sound at home.

The only explanation of these phenomena at all satisfactory to myself, would be in the acceptance of the theory of Professor

Helmholtz, that in the distribution of the auditory nerve different filaments are attuned to different notes, and are excited to action by the vibrations produced by waves of sound of certain pitch and volume, resulting in hearing; and that the death or obstruction of these different filaments destroys or impairs the power of hearing those notes.

These phenomena would indicate that only a comparatively few filaments might retain vitality, or mobility, sufficient for hearing their corresponding notes, whilst the vitality of all others is destroyed; just as a few keys of a piano may continue to sound when struck, whilst all the other keys of the same instrument are so obstructed as to produce no sound when similarly struck.

This patient came merely for consultation; and as the prognosis was so unfavorable she returned home, and nothing has since been learned of the further history of the case, though inquiry has been made for it.

CASE II.—F. F. B., age nine; a bright, active boy; had cerebro-spinal meningitis one year ago. Within an hour or two after the disease began to show itself he heard certain subjective sounds, which caused him to inquire if some one was not "popping corn" in an adjoining room; and at the same time he complained of great and increasing pain in his ears; and he has never heard since then. He *occasionally* recognizes the tick of a watch placed between his teeth; and the vibrations of a tuning-fork placed against his teeth, on the forehead, or over the mastoid processes, are either heard or felt. He recognizes scratching on a small rubber tube, one end of which is placed in the external meatus. In some of these trials the vibrations have been so slight as to seem to make it doubtful, if not impossible, that he felt them, instead of hearing the sound. There is in his case, as in some of the similar ones in which I have been consulted, a seemingly unnatural mental activity, as if some cerebral irritation existed, and produced excessive nervous action. This patient has just come under my care, and no result can be given.

CASE III.—M. E. C., age seven years; unusually fine physical development; is said to have had cerebro-spinal meningitis five years ago, which greatly impaired his hearing. One

year later he had measles, and since then has been wholly deaf. Each membrane of the drum is slightly opaque, and the Eustachian tubes are diminished in calibre. In examination it could not be determined whether he heard the tuning-fork, or felt its vibrations. There is the same irritable condition of the nervous system as in the preceding case, with unusual keenness of perception. The prognosis was also unfavorable, and the patient was not seen again after the consultation.

CASE IV.—A. H. R., age three; had cerebro-spinal meningitis three months since. He is now apparently quite healthy again, fat, and very large, for his age. The right membranum tympani is slightly inflamed, and the left one nearly normal. His power of speech has been impaired, but is not entirely lost. There is an unsteadiness of gait in walking, which is suggestive of the existence of Meniere's disease of the labyrinth as its cause. An alterative and tonic course of treatment was advised, and the little patient was taken home after consultation, and no subsequent history has been received. In this case there is less indication than usual of cerebral irritation.

CASE V.—P. C., age three; three months since he was supposed to have had typhoid fever. Careful inquiry as to the symptoms of his disease at that time renders it probable that he suffered from cerebro-spinal meningitis. Since then he has heard scarcely anything, and has almost entirely lost the power of speech. There is no marked evidence of cerebral irritation, but there is great unsteadiness of gait in walking, the only noticeable indication of physical impairment. Under an alterative and tonic course of treatment, he has so far improved that he has learned the names of all the members of the family with whom his parents are staying, and whom he never saw before; and he calls them by name, showing a returning power of speech.

CASE VI.—G. E. H., age two years and seven months; does not speak, and gives no evidence that he hears. Parents state that, within the first two months after his birth, there was some disease affecting him which caused him to throw his head back a great deal, and at the same time made him keep his spine curved backward, which symptoms manifested themselves for several months. At present there is no evidence of any in-

pairment of his physical health. There is, however, more indication of some cerebral irritation, if it may be correctly termed such, than in any of the preceding cases. It is certainly quite the reverse of the mental obtuseness seen in many cases of deafness. Prognosis was unfavorable, and the case was not seen again after the consultation.

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ART. VI.—A CASE OF CHOREA.—A NEW METHOD OF TREATMENT SUGGESTED.

BY RANSOM DEXTER, A.M., M.D., CHICAGO.

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IN the early part of January, of the past winter, my attention was called to the case of Miss D., aged thirteen, who had been suffering from impaired health for the previous six or eight weeks. This was attributed to hard study at school, and an effort was made to avert any further serious consequences from that cause, but too late, as the result proved; in less than forty-eight hours after her withdrawal from school, she presented decided symptoms of chorea.

On the 14th of January the disease had fairly made its invasion; and the first prescriptions I thought best suited for the existing conditions were as follows: Extract of valerian and cimicifuga, twice a day; and the elixir of pepsin, bismuth, and strychnia, before each meal; and bromide of potassium and cannabis indica at bed-time.

In a few days I noticed some malarial periodicity, but no cardiac or rheumatic troubles, though my little patient was growing worse rapidly. I now prescribed Fowler's solution of arsenic; but the symptoms appeared obstinate. I then solicited the advice of one of our most competent physicians, who approved of the adjustment of the agents to the peculiarities of the case; but the course of treatment to be instituted